



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Colucci et al.

Serial No.: 08/881,189

Filed: June 24, 1997

For: NUCLEIC ACID ENCODING A
LECTIN-DERIVED PROGENITOR
CELL PRESERVATION FACTOR

Examiner: Unassigned

Group Art Unit: Unassigned

Docket: 381-44

Dated: December 18, 1997

Assistant Commissioner for Patents
Washington, DC 20231

I hereby certify this correspondence is being deposited with the United States Postal Service as first class mail, postpaid in an envelope, addressed to: Assistant Commissioner for Patents, Washington, D.C.

20231 on December 18, 1997

Dated: 12-18-97 / D. McMahon

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INFORMATION DISCLOSURE STATEMENT

Sir:

In fulfillment of the requirements of candor and good faith set forth in 37 C.F.R.

§1.56, Applicants submit herewith the following Information Disclosure Statement in accordance with the provisions of 37 C.F.R. §§ 1.97 and 1.98.

I. U.S. PATENT DOCUMENTS

<u>U.S. PATENT NO./ PATENTEE</u>	<u>TITLE</u>	<u>ISSUE DATE</u>
4,808,611 Cosman	Use of Interleukin-1 to Induce Development of Multipotent Homopoietic Cell Populations	Feb. 28, 1989
5,186,931 Kishimoto et al.	Composition and Method for Supporting Bone Marrow Transplantation	Feb. 16, 1993
5,472,867 Kanz et al.	Ex Vivo Expansion of Peripheral Blood Progenitor Cells	Dec. 5, 1995

II. FOREIGN PATENTS

<u>COUNTRY PUBLICATION NO.</u>	<u>SUBJECT</u>	<u>PUBLICATION DATE</u>
WO 95/00554	Totipotent Hematopoietic Stem Cell Receptors and Their Ligands	Jan. 5, 1995

III. NON-PATENT PUBLICATIONS

- Altabella T and Chrispeels MJ, "Tobacco Plants Transformed with the Bean α ai Gene Express an Inhibitor of Insect α -Amylase in Their Seeds", *Plant Physiol.* 93:805-810 (1990).
- An G, Ebert PR, Mitra A and Ha SB, "Binary Vectors", *Plant Molecular Biology Manual* A3:1-19 (1988).
- Barondes SH, "Bifunctional Properties of Lectins: Lectins Redefined", *Trends in Biochemical Sciences* 13:480-482(1988).
- Berardi AC, Wang A, Levine JD, Lopez P and Scadden DT, "Functional Isolation and Characterization of Human Hematopoietic Stem Cells", *Science* 267:104-108(1995).
- Borge OJ, Ramsfjell V, Veiby OP, Murphy Jr. MJ, Lok S and Jacobsen SEW, "Thrombopoietin, But Not Erythropoietin Promotes Viability and Inhibits Apoptosis of Multipotent Murine Hematopoietic Progenitor Cells In Vitro", *Blood* 88(8):2859-2870 (1996).
- Dexter and Spooncer, "The Structure of the Hemopoietic System", *Cell Biol.* 3:423-441 (1987).
- Dosil M, Wang S and Lemischka IR, "Mitogenic Signalling and Substrate Specificity of the Flk2/Flt3 Receptor Tyrosine Kinase in Fibroblasts and Interleukin 3-Dependent Hematopoietic Cells", *Molecular and Cellular Biology* 13(10):6572-6585 (1993).
- Dwek RA, "Glycobiology: More Functions for Oligosaccharides", *Science* 269:1234-1235 (1995).
- Gabius H-J, "Non-Carbohydrate Binding Partners/Domains of Animal Lectins", *Int. J. Biochem* 26(4):469-477 (1994).
- Gowda LR, Savithri HS and Rao R, "The Complete Primary Structure of a Unique Mannose/Glucose-Specific Lectin from Field Bean (*Dolichos lab lab*)", *The Journal of Biological Chemistry* 269(29):18789-18793 (1994).
- Hao Q-L, Thiemann FT, Petersen D, Smogorzewska EM and Crooks GM, "Extended Long-Term Culture Reveals a Highly Quiescent and Primitive Human Hematopoietic Progenitor Population", *Blood* 88(9):3306-3313 (1996).
- Higgins TJV, Newbigin EJ, Spencer D, Llewellyn DJ and Craig S, "The Sequence of a Pea Vicilin Gene and its Expression in Transgenic Tobacco Plants", *Plant Molecular Biology* 11:683-695 (1988).
- Hoffman LM, Ma Y, Barker RF, "Molecular Cloning of *Phaseolus Vulgaris* Lectin mRNA and Use of cDNA as a Probe to Estimate Lectin Transcript Levels in Various Tissues" *Nucleic Acids Research* 10(23):7820-7829 (1982).
- Kuriyama M, Harada N, Kuroda S, Yamamoto T, Nakafuku M, Iwamatsu A, Yamamoto D, Prasad R, Croce C, Canaani E and Kaibuchi, K, "Identification of AF-6 and Canoe as Putative Targets for Ras*", *The Journal of Biological Chemistry* 271(2):607-610 (1996).
- Marfatia SM, Lue RA, Branton D and Chishti AH, "Identification of the Protein 4.1 Binding Interface on Glycophorin C and p55, a Homologue of the *Drosophila discs-large*

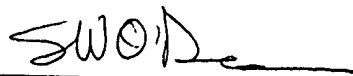
- Tumor Suppressor Protein*", *The Journal of Biological Chemistry* 270(2):715-719 (1995).
- Moreno J and Chrispeels MJ, "A Lectin Gene Encodes the α -amylase Inhibitor of the Common Bean", *Proc. Natl. Acad. Sci. USA* 86:7885-7889 (1989).
- Mosmann T, "Rapid Colorimetric Assay for Cellular Growth and Survival: Application to Proliferation and Cytotoxicity Assays", *Journal of Immunological Methods* 65:55-63 (1983).
- Opdenakker C, Rudd PM, Wormald M, Dwek RA and Van Damme J, "Cells Regulate the Activities of Cytokines by Glycosylation", *The FASEB Journal* 9:453-457 (1995).
- Pueyo JJ, Chrispeels MJ and Herman EM, "Degradation of Transport-Competent Destabilized Phaseolin with a Signal for Retention in the Endoplasmic Reticulum Occurs in the Vacuole", *Planta* 196:586-596 (1995).
- Shah AJ, Smogorzewska EM, Hannum C and Crooks GM, "Flt3 Ligand Induces Proliferation of Quiescent Human Bone Marrow CD34⁺CD38⁻ Cells and Maintains Progenitor Cells In Vitro", *Blood* 87(9):3563-3570 (1996).
- Sharon N and Lis H, "Lectins as Cell Recognition Molecules", *Science* 246:227-234 (1989).
- Small D, Levenstein M, Kim E, Carow C, Amin S, Rockwell P, Witte L, Burrow C, Ratajczak MZ, Gewirtz AM and Civin CI, "STK-1, the Human Homolog of Flk-2/Flt-3, is Selectively Expressed in CD34⁺ Human Bone Marrow Cells and is Involved in the Proliferation of Early Progenitor/Stem Cells", *Proc. Natl. Acad. Sci. USA* 91:459-463 (1994).
- Tessler S, Rockwell P, Hicklin D, Cohen T, Levi B-Z, Witte L, Lemischka IR, Neufeld G, "Heparin Modulates the Interaction of VEGF₁₆₅ with Soluble and Cell Associated *flk-1* Receptors", *The Journal of Biological Chemistry* 269(17):12456-12461 (1994).
- Turhan AG, Humphries K, Phillips GL, Eaves AC and Eaves CJ, "Clonal Hematopoiesis Demonstrated by X-Linked DNA Polymorphisms After Allogeneic Bone Marrow Transplantation", *The New England Journal of Medicine* 320(25):1655-1661 (1989).
- Young JC, Varma A, DiGiusto D and Backer MP, "Retention of Quiescent Hematopoietic Cells with High Proliferative Potential During Ex Vivo Stem Cell Culture", *Blood* 87(2):545-556 (1996).
- Zipori D, "Regulation of Hemopoiesis by Cytokines that Restrict Options for Growth and Differentiation", *Cancer Cells* 2(7):205-211 (1990).
- Zipori D, "The Renewal and Differentiation of Hemopoietic Stem Cells", *The FASEB Journal* 6:2691-2697.

Copies of the documents set forth above have been enclosed herewith for the convenience of the Examiner. A separate listing of these publications has been provided on form PTO-1449, also enclosed herewith.

In view of the present submission, it is believed that the present application is in all respects complete, and in condition for examination and favorable consideration.

If the Examiner has any questions or comments relating to the present application, he or she is respectfully invited to contact Applicant's attorney at the telephone number provided below.

Respectfully submitted,



Sean W. O'Dea
Registration No.: 37,690
Attorney for Applicants

HOFFMANN & BARON, LLP
350 Jericho Turnpike
Jericho, New York 11753
(516) 822-3550
SWO/dm



Sheet 1 of 3

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE
(Rev. 2-32) PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(Use several sheets if necessary)

ATTY. DOCKET NO.
381-44SERIAL NO.
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Colucci et al.FILING DATE
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U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	4,808,611	02/28/89	Cosman			
	5,186,931	02/16/93	Kishimoto et al.			
	5,472,867	12/05/95	Kenz et al.			

FOREIGN PATENT DOCUMENTS

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						YES	NO
	WO 95/00554	01/05/95					

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Altabella T and Chrispeels MJ, "Tobacco Plants Transformed with the Bean α i Gene Express an Inhibitor of Insect α -Amylase in Their Seeds", <i>Plant Physiol.</i> 93:805-810 (1990).
	An G, Ebert PR, Mitra A and Ha SB, "Binary Vectors", <i>Plant Molecular Biology Manual</i> A3:1-19 (1988).
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FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE
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			Hao Q-L, Thiemann FT, Petersen D, Smogorzewska EM and Crooks GM, "Extended Long-Term Culture Reveals a Highly Quiescent and Primitive Human Hematopoietic Progenitor Population", <i>Blood</i> 88(9):3306-3313 (1996).
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			Hoffman LM, Ma Y, Barker RF, "Molecular Cloning of <i>Phaseolus Vulgaris</i> Lectin mRNA and Use of cDNA as a Probe to Estimate Lectin Transcript Levels in Various Tissues" <i>Nucleic Acids Research</i> 10(23):7820-7829 (1982).
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			Moreno J and Chrispeels MJ, "A Lectin Gene Encodes the α -amylase Inhibitor of the Common Bean", <i>Proc. Natl. Acad. Sci. USA</i> 86:7885-7889 (1989).
			Mosmann T, "Rapid Colorimetric Assay for Cellular Growth and Survival: Application to Proliferation and Cytotoxicity Assays", <i>Journal of Immunological Methods</i> 65:55-63 (1983).
			Opdenakker C, Rudd PM, Wormald M, Dwek RA and Van Damme J, "Cells Regulate the Activities of Cytokines by Glycosylation", <i>The FASEB Journal</i> 9:453-457 (1995).
			Pueyo JJ, Chrispeels MJ and Herman EM, "Degradation of Transport-Competent Destabilized Phaseolin with a Signal for Retention in the Endoplasmic Reticulum Occurs in the Vacuole", <i>Planta</i> 196:586-596 (1995).
			Shah AJ, Smogorzewska EM, Hannum C and Crooks GM, "Flt3 Ligand Induces Proliferation of Quiescent Human Bone Marrow CD34 ⁺ CD38 ⁻ Cells and Maintains Progenitor Cells In Vitro", <i>Blood</i> 87(9):3563-3570 (1996).

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			Small D, Levenstein M, Kim E, Carow C, Amin S, Rockwell P, Witte L, Burrow C, Ratajczak MZ, Gewirtz AM and Civin CI, "STK-1, the Human Hmolog of Flk-2/Flt-3, is Selectively Expressed in CD34 ⁺ Human Bone Marrow Cells and is Involved in the Proliferation of Early Progenitor/Stem Cells", <i>Proc. Natl. Acad. Sci. USA</i> 91:459-463 (1994).
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